

ATTORNEY DOCKET NO.:
069204.0177

PATENT APPLICATION
10/014,839

1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Mohammed N. Islam
Serial No.: 10/014,839
Filing Date: December 10, 2001
Group Art Unit: 3663
Title: MULTI-STAGE OPTICAL AMPLIFIER AND
BROADBAND COMMUNICATION SYSTEM

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INFORMATION DISCLOSURE STATEMENT

Applicant respectfully requests, pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, that the references listed on the attached PTO-1449 form be considered and cited in the examination of the above-identified patent application. Copies of the references are enclosed for the convenience of the Examiner. Furthermore, pursuant to 37 C.F.R. § 1.97(h), no representation is made that these references qualify as prior art or that these references are material to the patentability of the present application.

This Information Disclosure Statement is being submitted pursuant to 37 C.F.R. § 1.97(b)(4).

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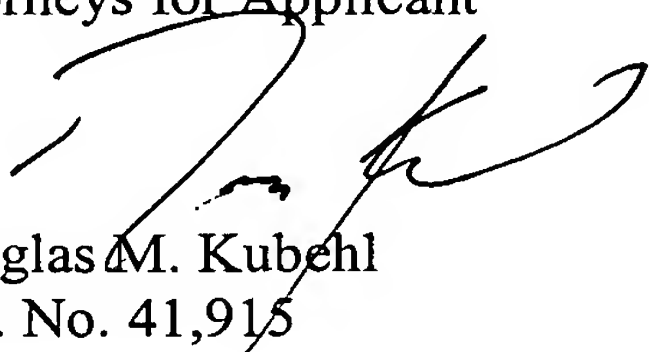
PATENT APPLICATION
10/014,839

2

Applicant believes no fee is due. However, the Commissioner is hereby authorized to charge fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

Baker Botts L.L.P.
Attorneys for Applicant



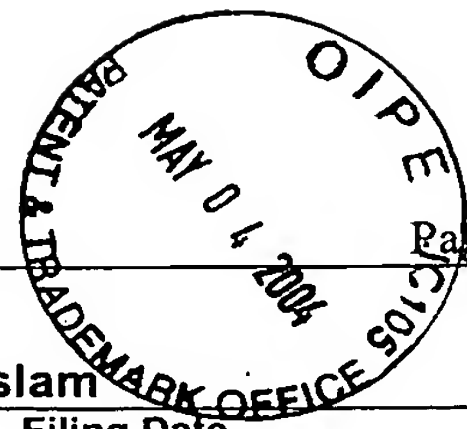
Douglas M. Kubehl
Reg. No. 41,915

Dated: 5-4-04

Correspondence Address:

X Customer Number

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	10/014,839	Mohammed N. Islam	
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		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	4,063,106	12/13/1977	Ashkin et al.	307	88.3	04/25/1977
	B	4,685,107	08/04/1987	Kafka et al.	372	6	06/09/1986
	C	4,715,679	12/29/1987	Bhagavatula	350	96.33	02/02/1987
	D	4,740,974	04/26/1988	Byron	372	3	12/11/1985
	E	4,831,616	05/16/1989	Huber	370	3	03/31/1987
	F	5,039,199	08/13/1991	Mollenauer et al.	359	334	12/29/1989
	G	5,050,183	09/17/1991	Duling, III	372	94	11/05/1990
	H	5,058,974	10/22/1991	Mollenauer	385	27	10/06/1989
	I	5,107,360	04/21/1992	Huber	359	124	11/05/1990
	J	5,117,196	05/26/1992	Epworth et al.	359	333	04/23/1990
	K	5,132,976	07/21/1992	Chung et al.	372	6	05/28/1991
	L	5,134,620	07/28/1992	Huber	372	6	11/20/1990
	M	5,140,456	08/18/1992	Huber	359	341	04/08/1991

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		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	N	WO 98/20587	05/14/1998	PCT	H01S	3/30	X	
	O	EP 0 903 876 A1	03/24/1999	EPO	H04B	10/17	X	
	P	EP 0 936 761 A1	08/18/1999	EPO	H04B	10/18	X	
	Q	WO 02/17518 A1	02/28/2002	PCT	H04B	10/17	X	

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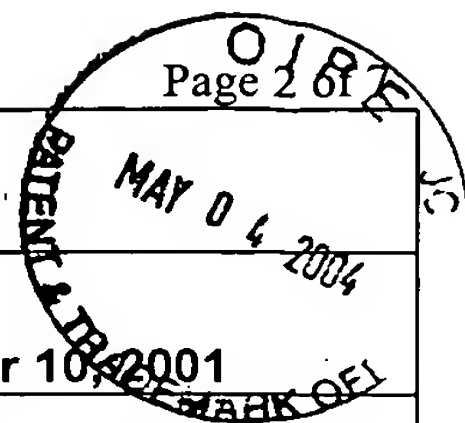
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	R	Sun et al., "80nm ultra-wideband erbium-doped silica fibre amplifier," Electronics Letters Vol. 33, No. 23, pp. 1965-1967	11/06/1997
	S	Wysocki et al., "Broad-Band Erbium-Doped Fiber Amplifier Flattened Beyond 40 nm Using Long-Period Grating Filter," IEEE Photonics Technology Letters, Vol. 9, No. 10, pp. 1343-1345	10/10/1997
	T	Liaw et al., "Passive Gain-Equalized Wide-Band Erbium-Doped Fiber Amplifier Using Samarium-Doped Fiber," IEEE Photonics Technology Letters, Vol. 8, No. 7, pp. 879-881	07/1996
	U	Yamada et al., "A Low-Noise and Gain-Flattened Amplifier Composed of a Silica-Based and a Fluoride-Based Er ³⁺ -Doped Fiber Amplifier in a Cascade Configuration," IEEE Photonics Technology Letters, Vol. 8, No. 5, pp. 620-622	05/1996
	V	Ma et al., "240-km Repeater Spacing in a 5280-km WDM System Experiment Using 8 x 2.5 Gb/s NRZ Transmission," IEEE Photonics Technology Letters, Vol. 10, No. 6, pp. 893-895	06/1998

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	A	5,151,908	09/29/1992	Huber	372	6	10/09/1991
	B	5,153,762	10/06/1992	Huber	359	125	03/19/1990
	C	5,159,601	10/27/1992	Huber	372	6	07/17/1991
	D	5,166,821	11/24/1992	Huber	359	238	03/12/1991
	E	5,187,760	02/16/1993	Huber	385	37	01/23/1992
	F	5,191,586	03/02/1993	Huber	372	6	07/18/1991
	G	5,191,628	03/02/1993	Byron	385	27	10/29/1991
	H	5,200,964	04/06/1993	Huber	372	26	01/15/1992
	I	5,208,819	05/04/1993	Huber	372	32	01/23/1992
	J	5,210,631	05/11/1993	Huber et al.	359	132	12/22/1989
	K	5,212,579	05/18/1993	Huber et al.	359	182	03/11/1991
	L	5,218,655	06/08/1993	Mizrahi	385	39	05/29/1992
	M	5,222,089	06/22/1993	Huber	372	26	01/08/1992
	N	5,225,925	07/06/1993	Grubb et al.	359	341	07/24/1991
	O	5,226,049	07/06/1993	Grubb	372	6	02/06/1992

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		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	Q	Kawai, S. et al., "Ultra-Wide, 75-nm 3-dB gain-Band Optical Amplifier Utilising Gain-Flattened Erbium-Doped Fluoride Fibre Amplifier and Discrete Raman Amplification," Electronics Letters, Vol. 34, No. 9, pp. 897-898	04/30/1998
	R	Kidorf et al., Pump Interactions in a 100-nm Bandwidth Raman Amplifier," IEEE Photonics Technology Letters, Vol. 11, No. 5, pp. 530-532	05/1999
	S	Ono et al., "Gain-Flattened Er ³⁺ -Doped Fiber Amplifier for a WDM Signal in the 1.57-1.60-μm Wavelength Region," IEEE Photonics Technology Letters, Vol. 9, No. 5, pp. 596-598	05/1997
	T	Hansen et al., "529km unrepeated transmission at 2.488 GBit/s using dispersion compensation, forward error correction, and remote post- and pre-amplifiers pumped by diode-pumped Raman lasers," IEEE Electronics Letters, Online No. 19951043	07/07/1998
	U	Guy et al., "Lossless Transmission of 2ps Pulses Over 45km of Standard Fibre at 1.3μm Using Distributed Raman Amplification," Electronics Letters, Vol. 34, No. 8, pp. 793-794	04/06/1998

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		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	5,243,609	09/07/1993	Huber	372	19	05/22/1992
	B	5,257,124	10/26/1993	Glaab et al.	359	124	08/15/1991
	C	5,268,910	12/07/1993	Huber	372	6	07/27/1992
	D	5,271,024	12/14/1993	Huber	372	6	07/27/1992
	E	5,283,686	02/01/1994	Huber	359	337	07/27/1992
	F	5,293,545	03/08/1994	Huber	359	111	07/27/1992
	G	5,295,016	03/15/1994	Van Deventer	359	347	05/29/1992
	H	5,295,209	03/15/1994	Huber	385	37	11/10/1992
	I	5,301,054	04/05/1994	Huber et al.	359	132	01/14/1993
	J	5,321,543	06/14/1994	Huber	359	187	10/20/1992
	K	5,321,707	06/14/1994	Huber	372	6	07/27/1992
	L	5,323,404	06/21/1994	Grubb	372	6	11/02/1993
	M	5,331,449	07/19/1994	Huber et al.	359	125	03/15/1993
	N	5,359,612	10/25/1994	Dennis et al.	372	18	09/29/1993
	O	5,373,389	12/13/1994	Huber	359	195	10/27/1992

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	R	Dianov et al., "Highly efficient 1.3µm Raman fibre amplifier," Electronics Letters, Vol. 34, No. 7, pp. 669-670	04/02/1998
	S	Chernikov et al., "Raman Fibre Laser Operating at 1.24µm," Electronics Letters, Vol. 34, No. 7, 2 pages	04/02/1998
	T	Masuda et al., "Wideband, Gain-Flattened, Erbium-Doped Fibre Amplifiers with 3dB Bandwidths of >50nm," Electronics Letters, Vol. 33, No. 12, pp. 1070-1072	06/05/1997
	U	Yang et al., "Demonstration of Two-Pump Fibre Optical Parametric Amplification," Electronics Letters, Vol. 33, No. 21, pp. 1812-1813	10/09/1997
	V	Paschotta et al., "Ytterbium-Doped Fiber Amplifiers," IEEE Journal of Quantum Electronics, Vol. 33, No. 7, pp. 1049-1056	07/1997

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		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	5,389,779	02/14/1995	Betzig et al.	250	216	07/29/1993
	B	5,400,166	03/21/1995	Huber	359	173	10/20/1992
	C	5,416,629	05/16/1995	Huber	359	182	12/02/1992
	D	5,450,427	09/12/1995	Fermann et al.	372	18	10/21/1994
	E	5,467,212	11/14/1995	Huber	359	168	12/30/1994
	F	5,473,622	12/05/1995	Grubb	372	6	12/29/1994
	G	5,477,555	12/19/1995	Debeau et al.	372	25	01/21/1994
	H	5,479,291	12/26/1995	Smith et al.	359	333	04/08/1994
	I	5,485,481	01/16/1996	Ventrudo et al.	372	6	06/28/1994
	J	5,497,386	03/05/1996	Fontana	372	18	09/15/1994
	K	5,504,609	04/02/1996	Alexander et al.	359	125	05/11/1995
	L	5,504,771	04/02/1996	Vahala et al.	372	94	11/03/1992
	M	5,513,194	04/30/1996	Tamura et al.	372	6	04/07/1995
	N	5,521,738	05/28/1996	Froberg et al.	359	184	06/30/1994
	O	5,530,710	06/25/1996	Grubb	372	6	05/15/1995

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	Q	Grubb, S.G. et al., "Fiber Raman Lasers Emit at Many Wavelengths," Laser Focus World, pp. 127-134	02/1996
	R	Mollenauer, L.F. et al., "Dispersion-Managed Solutions for Terrestrial Transmission," Optical Society of America, 0146-9592/99/050285-03	Rec'd 10/28/1998
	S	Hansen, S.L., et al., "Gain Limit in Erbium-Doped Fiber Amplifiers Due to Internal Rayleigh Backscattering," IEEE Photonics Technology Letters, Vol. 4, No. 6, pp. 559-661	06/1992
	T	Spirit et al., "Systems Aspects of Raman Fibre Amplifiers," Optical Amplifiers for Communication, IEEE Proceedings, Vol. 137, Pt. J, No. 4, pp. 221-224	08/1990
	U	Mollenauer et al., "Soliton Propagation in Long Fibers with Periodically Compensated Loss," IEEE Journal of Quantum Electronics, Vol. QE-22, No. 1, pp. 157-173	01/1986
	V	Hansen et al., "Rayleigh Scattering Limitations in Distributed Raman Pre-Amplifiers," IEEE Photonics Technology Letters, Vol. 10, No. 1, pp. 159-161	01/1998

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		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	5,532,864	07/02/1996	Alexander et al.	359	177	06/01/1995
	B	5,541,947	07/30/1996	Mourou et al.	372	25	05/10/1995
	C	5,542,011	07/30/1996	Robinson	385	24	09/09/1994
	D	5,555,118	09/10/1996	Huber	359	125	08/11/1995
	E	5,557,442	09/17/1996	Huber	359	179	12/30/1994
	F	5,577,057	11/19/1996	Frisker	372	18	09/20/1993
	G	5,579,143	11/26/1996	Huber	359	130	06/04/1993
	H	5,600,473	02/04/1997	Huber	359	179	02/24/1995
	I	5,617,434	04/01/1997	Tamura et al.	372	6	04/22/1996
	J	5,659,351	08/19/1997	Huber	348	7	12/30/1994
	K	5,659,559	08/19/1997	Ventrudo et al.	372	6	03/21/1995
	L	5,659,644	08/19/1997	DiGiovanni et al.	385	31	06/07/1996
	M	5,673,281	09/30/1997	Byer	372	3	04/20/1996
	N	5,701,186	12/23/1997	Huber	359	125	03/29/1996

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	P	Marhic, M.E. et al., "Cancellation of Stimulated-Raman-Scattering Cross Talk in Wavelength-Division-Multiplexed Optical Communication Systems by Series or Parallel Techniques," Optical Society of America, Vol 15, No. 3, pp. 958-963	03/1998
	Q	Ikeda, M., "Stimulated Raman Amplification Characteristics in Long Span Single-Mode Silica Fibers," Optics Communications, Vol. 39, No. 3, pp. 148-152	Rec'd 06/15/1981
	R	Chraplyvy, et al., "Performance Degradation due to Stimulated Raman Scattering in Wavelength-Division- Multiplexed Optical-Fibre Systems," Electronics Letters, Vol. 19, No. 16, pp. 651-643	08/04/1983
	S	Grandpierre et al., "Theory of Stimulated Raman Scattering Cancellation in Wavelength-Division-Multiplexed Systems via Spectral Inversion," IEEE Photonics Technology Letters, Vol. 11, No. 10, pp. 1271-1273	10/1999
	T	Chinn, "Analysis of Counter-Pumped Small-Signal Fibre Raman Amplifiers," Electronics Letters, Vol. 33, No. 7, pp. 607-608	03/27/1997

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	A	5,726,784	03/10/1998	Alexander et al.	359	125	03/29/1996
	B	5,734,665	03/31/1998	Jeon et al.	372	6	09/18/1996
	C	5,757,541	05/26/1998	Fidit	359	341	01/15/1997
	D	5,768,012	06/16/1998	Zanoni et al.	359	341	03/07/1997
	E	5,798,855	08/25/1998	Alexander et al.	359	177	06/28/1996
	F	5,825,520	10/20/1998	Huber	359	130	08/11/1995
	G	5,831,754	11/03/1998	Nakano	359	161	05/01/1995
	H	5,838,700	11/17/1998	Dianov et al.	372	6	02/11/1997
	I	5,841,797	11/24/1998	Ventrudo et al.	372	6	12/24/1996
	J	5,847,862	12/08/1998	Chraplyvy et al.	359	337	11/29/1997
	K	5,861,981	01/19/1999	Jabr	359	341	08/20/1997
	L	5,880,866	03/09/1999	Stolen	359	138	11/13/1996
	M	5,883,736	03/16/1999	Oshima et al.	359	341	02/21/1997
	N	5,887,093	03/23/1999	Hansen et al.	385	27	09/12/1997

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	P	Stolen, R.H. et al., "Raman Gain in Glass Optical Waveguides," Appl. Phys. Lett., Vol. 2, No. 6, pp. 276-278	03/15/1973
	Q	Stolen, R.H. et al., "Development of the Stimulated Raman Spectrum in Single-Mode Silica Fibers," Optical Society of America, Vol. 1, No. 4, pp. 662-667	08/1984
	R	Takachio, N. et al., "32x10 Gb/s Distributed Raman Amplification Transmission with 50-GHz Channel Spacing in the Zero-Dispersion Region over 640km of 1.55-μm Dispersion-shifted Fiber," NTT Network Innovation Laboratories, 12 pages	(OFC) 1999
	S	Dianov, "Raman fiber amplifiers," Fiber Optics Research Center at the General Physics Institute of the Russian Academy of Sciences, Moscow, Russia, 5 pages	© 1999
	T	Srivastava et al., "System Margin Enhancement with Raman Gain in Multi-Span WDM Transmission," Technical Digest, OFC '99, 3 pages	02/26/1999
	U	S.A.E. Lewis, et al., "1.4W Saturated Output Power from a Fibre Raman Amplifier," Femtosecond Optics Group, Physics Department, Imperial College, London, England, 114/WG5-1, 3 pages	OFC 1999

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	A	5,920,423	07/06/1999	Grubb et al.	359	341	12/05/1997
	B	6,147,794	11/14/2000	Stentz	359	334	02/04/1999
	C	6,204,960 B1	03/20/2001	Desurvire	359	341	07/06/1999
	D	6,342,965 B1	01/29/2002	Kinoshita	359	334	03/19/1996
	E	6,344,922 B1	02/05/2002	Grubb et al.	359	334	02/19/1999
	F	6,433,921 B1	08/13/2002	Wu et al.	359	334	02/15/2001
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		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
		USSN 10/100,591, "System and Method for Managing System Margin," Islam et al., pending	03/15/2002
		USSN 10/100,587, "Fiber Optic Transmission System with Low Cost Transmitter Compensation," Islam, pending	03/15/2002
		USSN 10/116,487, "Fiber Optic Transmission System for a Metropolitan Area Network," Islam, pending	04/03/2002
		USSN 10/100,589, "System and Method for Dispersion Compensation in an Optical Communication System," Islam et al., pending	03/15/2002
		USSN 10/100,700, "Rack System for an End Terminal in an Optical Communication Network," Islam et al., pending	03/15/2002

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